



MSN4-4.0

METALLURGICAL TEST REPORT

C107763

North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

740 Imperial Road North

Certificate: 959818 1
Customer: 007226 001
Mail To: ASA ALLOYS
20 CHALLENGER CRES.
SHERWOOD PARK, AB T8H2R1

Ship To: ASA ALLOYS
20 CHALLENGER CRES.
SHERWOOD PARK, AB T8H2R1

Date: 6/20/2014 Page: 1
Steel: 316/316L
Finish: RT
Corrosion: ASTM A262 Prac E OK
Red Ratio: 4.7 :1

Your Order: P033461

NAS Order: IN 0193231 01

PRODUCT DESCRIPTION:

NACE MR0175 (MID RADIUS ONLY)
Round Bar, Hot Rolled, Annealed, Rough Turned
UNS 31600/31603 EN 10204 3.1, ASTM A484/13a
ASTM A276/13, ASTM A479/13a, ASTM A182/13 CHEM ONLY,
ASME SA479/13, ASME SA182/10 CHEM ONLY, ASTM F899/11
AMS 5648I/AMS 5653G, AMS QQS-763B, QQS 763F
SOLUTION ANNEAL TEMP 1900F MIN, ASTM A320/08 CL 1 GR B8M
ASTM A193/10A-ASME SA193/10 CL 1 GR B8M(EXC PAR 7.2)

REMARKS:

COMPLIES W/REQUIREMENTS OF DFAR 252.225-7009 EU DIRECTIVE
2011/65/EU. RoHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Skid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
BG3853 3		4.0000		1,056	144.00	3	1	

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Chemical Analysis per ASTM A751/08

HEAT	CM	C %	CO %	CR %	CU %	MN %	MO %	N %	NI %	P %
MSN4	US	.0184	.2005	16.7035	.3520	1.3615	2.0060	.0432	10.5500	.0295
		S %	SI %							
		.0235	.2735							

MECHANICAL PROPERTIES

Product Id	l d o i c z	HB No.	.2YS KSI	UTS KSI	RA %	Elong % 4D
BG3853 3	R L	153.00	39.00	82.00	69.00	55.00

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

ABHIJEET BHAVE -

6/20/2014